

WHAT IS CLAIMED IS:

1. An information recording apparatus for recording information in a recordable recording medium in conformity to a recording format for a reproduction-only recording medium,  
5 the apparatus comprising:

an encoding device for encoding said information with a predetermined constant encoding rate and generating encoding information;

10 a converting device for converting said generated encoding information into format information in conformity to said recording format; and

a recording device for recording said converted format information in said recordable recording medium;

wherein said converting device comprising:

15 a unit information forming device for dividing said encoding information and forming unit information so that required time for reproduction of said unit information after the unit information in said recording format is recorded in said recordable recording medium becomes a constant unit time  
20 corresponding to said encoding rate;

an upper unit information forming device for forming upper unit information so that the number of said unit information, which is included in said upper unit information comprising a plurality of said unit information in said recording format,  
25 becomes a constant number corresponding to said unit time;

an address information generating device for generating address information for indicating a recording position on said

recordable recording medium of said unit information whose required time for reproduction is said unit time; and

a format information generating device for generating said format information so that said generated address information is contained in said unit information.

2. The information recording apparatus according to claim 1, wherein said address information generating device generates said address information contained in said one unit information so as to indicate a recording position on said recordable recording medium of said other unit information to be reproduced back and forth of said one unit information.

3. The information recording apparatus according to claim 1, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.

4. The information recording apparatus according to claim 2, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack

in said recording format.

5. The information recording apparatus according to claim 3, wherein said unit time is 0.5 second, and said constant number is 60.

6. The information recording apparatus according to claim 4, wherein said unit time is 0.5 second, and said constant number is 60.

7. An information recording method for recording information in a recordable recording medium in conformity to a recording format for a recording medium for reproduction only, the method comprising the processes of:

encoding said information with a predetermined constant encoding rate and generating encoding information;

converting said generated encoding information into format information in conformity to said recording format; and

recording said converted format information in said recordable recording medium;

wherein said process of converting said generated encoding information comprising the processes of:

dividing said encoding information and forming unit information so that the required time for reproduction of said unit information after the unit information in said recording format is recorded in said recordable recording medium becomes a constant unit time in association with said encoding rate;

forming upper unit information so that the number of said unit information, which is included in said upper unit information comprising a plurality of said unit information in said recording format, becomes a constant number corresponding to said unit time;

generating address information for indicating a recording position on said recordable recording medium of said unit information whose required time for reproduction is said unit time; and

generating said format information so that said generated address information contained in said unit information.

8. The information recording method according to claim 7, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.

9. The information recording method according to claim 7, wherein, in said address information generating process, said address information contained in said one unit information is generated so as to indicate a recording position on said recordable recording medium of said other unit information to be reproduced back and forth of said present one unit information.

10. The information recording method according to claim 9, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.

11. An information recording medium, in which a recording control program is recorded capable of being read by a recording computer, for functioning said recording computer included in an information recording apparatus for recording information in a recordable recording medium in conformity to a recording format for a recording medium for reproduction only, the recording control program causing the recording computer to function as:

an encoding device for encoding said information with a predetermined constant encoding rate and generating encoding information;

a converting device for converting said generated encoding information into format information in conformity to said recording format; and

a recording device for recording said converted format information in said recordable recording medium;

wherein said converting device comprising:

a unit information forming device for dividing said encoding information and forming unit information so that the

required time for reproduction of said unit information after the unit information in said recording format is recorded in said recordable recording medium becomes a fixed unit time corresponding to said encoding rate;

5        an upper unit information forming device for forming said upper unit information so that the number of said unit information, which is included in said upper unit information comprising a plurality of said unit information in said recording format, becomes a constant number in association with said unit time;

10        an address information generating device for generating address information for indicating a recording position on said recordable recording medium of said unit information whose required time for reproduction as said unit time; and

15        a format information generating device for generating said format information so that said generated address information is contained in said unit information.

12.    The information recording medium according to claim 11, wherein said recording format is a recording format in conformity  
20    to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.

25    13.    The information recording medium according to claim 11, wherein said address information generating device generates

said address information contained in said one unit information so as to indicate a recording position on said recordable recording medium of said other unit information to be reproduced back and forth of said present one unit information.

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14. The information recording method according to claim 13, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.

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15. A computer data signal embodied in a carrier wave and representing a series of instructions which cause a computer to perform steps to execute a recording control process in an information recording apparatus for recording information in a recordable recording medium in conformity to a recording format for a recording medium for reproduction only, the steps comprising:

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an encoding step for encoding said information with a predetermined constant encoding rate and generating encoding information;

a converting step for converting said generated encoding information into format information in conformity to said recording format; and

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a recording step for recording said converted format

information in said recordable recording medium;

wherein said converting step comprising:

a unit information forming step for dividing said encoding  
information and forming unit information so that the required  
5 time for reproduction of said unit information after the unit  
information in said recording format is recorded in said  
recordable recording medium becomes a fixed unit time  
corresponding to said encoding rate;

an upper unit information forming step for forming said  
10 upper unit information so that the number of said unit information,  
which is included in said upper unit information comprising a  
plurality of said unit information in said recording format,  
becomes a constant number in association with said unit time;

an address information generating step for generating  
15 address information for indicating a recording position on said  
recordable recording medium of said unit information whose  
required time for reproduction as said unit time; and

a format information generating step for generating said  
format information so that said generated address information  
20 is contained in said unit information.

16. The computer data signal embodied in a carrier wave  
according to claim 15, wherein said recording format is a  
recording format in conformity to a DVD video standard, said  
25 recordable recording medium is a DVD-R, said unit information  
is a VOB in said recording format, said upper unit information  
is a VOB in said recording format, and said address information



comprises a navigation pack in said recording format.

17. The computer data signal embodied in a carrier wave according to claim 15, wherein said address information generating step generates said address information contained in said one unit information so as to indicate a recording position on said recordable recording medium of said other unit information to be reproduced back and forth of said present one unit information.

18. The computer data signal embodied in a carrier wave according to claim 17, wherein said recording format is a recording format in conformity to a DVD video standard, said recordable recording medium is a DVD-R, said unit information is a VOB in said recording format, said upper unit information is a VOB in said recording format, and said address information comprises a navigation pack in said recording format.